$$E_n^{k+1} = \alpha E_n^k + (1-\alpha) E_r^{k+1}$$

Where the superscript K is the block number and α is an empirically chosen weight.

a1

5. (Amended-Clean Text) A method as claimed in claim 2 further comprising the steps of determining a noise threshold from the noise energy and updating the noise energy and noise threshold when the signal energy is below the noise threshold.

8. (Amended-Clean Text) A method as claimed in claim 5 wherein the noise threshold T_{n1} is determined in accordance with:

$$T_{n1} = \delta_1 E_n$$

a2 Where δ_1 is an empirically chosen value.

9. (Amended-Clean Text) A method as claimed in claim 5 wherein the noise threshold T_{n2} is determined in accordance with:

$$T_{n2} = \delta_2 E_n$$

Where δ_2 is an empirically chosen value.

10. (Amended-Clean Text) A method as claimed in claim 1 further comprising the step of determining the direction of arrival of the target signal.

12. (Amended-Clean Text) A method as claimed in claim 10 further comprising the step of treating the signal as an unwanted signal if the signal has not impinged on the array from within a selected angular range.

13. (Amended-Clean Text) A method as claimed in claim 1 further comprising the step of calculating a measure of the cross-correlation of signals from two spaced sensors of the array and treating the signal as an unwanted signal if the degree of cross correlation is less than a selected value.

16. (Amended-Clean Text) A method as claimed in claim 14 further comprising the step of treating the signal as an unwanted signal if the reverberation measure indicates a degree of reverberation in excess of a selected value.

17. (Amended-Clean Text) A method as claimed in claim 1 further comprising the step of controlling the operation of the first filter to perform adaptive filtering only when a said target signal is deemed to be present.

18. (Amended-Clean Text) A method as claimed in claim 1 wherein the first adaptive filter has a plurality of channels receiving as input the digitized signals and providing as

output a sum and at least one difference signal, the difference signal channels including filter elements having corresponding filter weights.

22. (Amended-Clean Text) A method as claimed in claim 1 further comprising the step of controlling the operation of the second filter to perform adaptive filtering only when a said target is deemed not to be present.

23. (Amended-Clean Text) A method as claimed in claim 1 wherein the first adaptive filter has a plurality of channels receiving input signals from the first adaptive filter and providing as output a sum signal received from the first adaptive filter, an error signal and at least one difference signal, the difference signal channels including further filter elements having corresponding further filter weights.

25. (Amended-Clean Text) A method as claimed in claim 23 further comprising the step of combining the sum signal and the error signal to form a single signal S(t) of the form:

$$S(t) = W_1 S_c(t) + W_2 e_c(t)$$

where $S_c(t)$ is the sum signal at time t, $e_c(t)$ is the error signal at time t and W_1 and W_2 are weight values.

27. (Amended-Clean Text) A method as claimed in claim 25 further comprising the step of applying a Hanning window to the single signals.

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28. (Amended-Clean Text) A method as claimed in claim 1 further comprising the step of transforming the filtered signals into two frequency domain signals a desired signal S_f and an interference signal I_f, processing the transformed signals to provide a gain for the desired signal and transforming the gain modified desired signal back to the time domain to provide an output.

35. (Amended-Clean Text) A method as claimed in claim 29 wherein the processing step includes the step of warping the signal and interference spectra into a Bark scale to form corresponding signal and interference Bark spectra.

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39. (Amended-Clean Text) A method as claimed in claim 29 further comprising the step of calculating a signal to noise ratio from the spectra and deriving the gain from the signal to noise ratio.

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42. (Amended-Clean Text) A method as claim 40 wherein the scaling factor changes exponentially.

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